



Figure 4: The McMicken Dam and Beardsley Canal—facing south toward the White Tank Mountains.

Open House

6:00–8:00PM
Thursday, September 21, 2006
Dysart Education Center
15802 N. Parkview Place, Surprise

This meeting is for the purpose of familiarizing local residents with the McMicken Dam and the current project. At the Open House, the public will have an opportunity to talk informally with project team members and receive updates about the McMicken Dam Project.

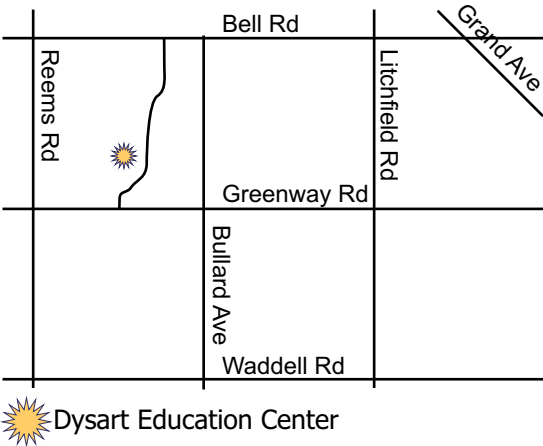
Next Steps

The District's study team is currently developing alternatives for the project. The District anticipates that an Implementation Plan will be recommended by fall 2007. Final design and construction dates have not been established. Information will be shared with the public throughout the process.

For More Information contact:

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The District will distribute newsletters and other informational materials at key milestones in the project. To receive these materials, contact Nicole Kelley at 602-506-6762



Wittmann Area Drainage Master Plan McMicken Dam Project

September 2006

Introduction

Since its inception in 1959, the Flood Control District of Maricopa County (District) has provided flood control services to County residents in order to ensure public safety and to protect property from flooding. Those services have included the design and installation of numerous regional flood control structures. One of these structures, McMicken Dam Project, was originally constructed to protect Luke Air Force Base and surrounding agricultural lands from flooding. However, since the initial construction, considerable development in the Cities of Glendale, Peoria, and Surprise has occurred downstream from the dam. These communities benefit significantly from the McMicken Dam Project. In addition to flood protection for the citizens, critical public facilities are protected such as hospitals, schools, police and fire stations, freeways and other public roads, railroads, and canals.

The McMicken Dam Project consists of McMicken Dam as well as the McMicken Dam Outlet Channel and McMicken

Dam Outlet Wash. The McMicken Dam is an earthen dam approximately 10 miles long and 34 feet high, located within the City of Surprise between Peoria Avenue and Happy Valley Road. Stormwater is collected from large areas north of the dam and transported northeasterly by the McMicken Dam Outlet Channel (approximately six miles long) and then southerly by the McMicken Dam Outlet Wash (approximately four miles long) where it ultimately empties into the Agua Fria River.

The McMicken Dam Project includes other elements typical of a dam such as an impoundment reservoir, a low-flow channel, a principal outlet, and an emergency spillway. The emergency spillway is used as a bypass when the water in the impoundment reservoir exceeds the flood storage capacity of the dam. Although discharges from emergency spillway as a result of an extremely large storm can flood downstream areas, these discharges protect the earthen dam by preventing overtopping and potential failure of the dam.

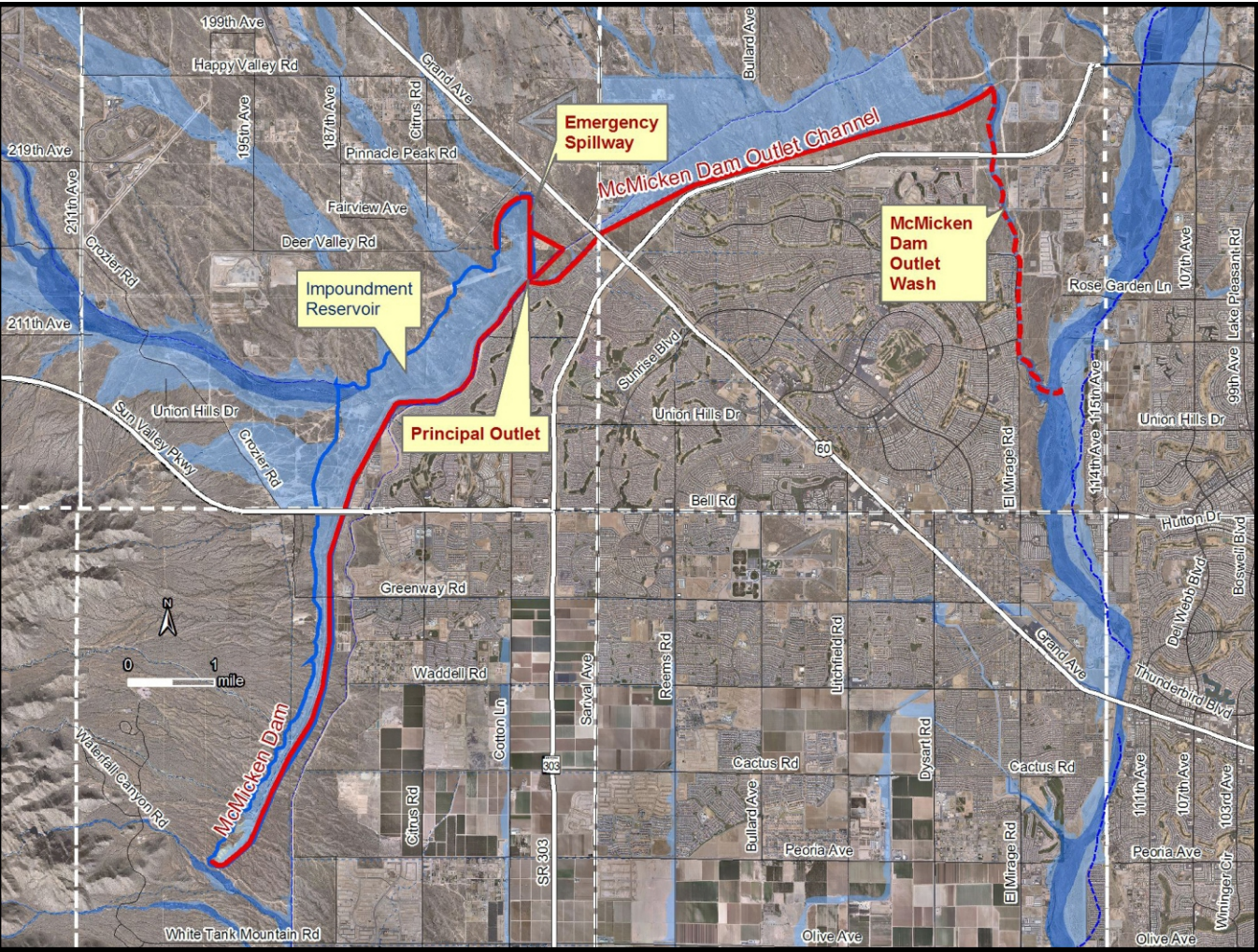


Figure 1: Off-road vehicles are detrimental to the structural integrity of flood control structures, including the McMicken Dam Project.

Estimated Schedule for Wittmann ADMP

	2005		2006				2007			
	3rd Qtr	4th Qtr	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr
Complete ADMSU										
ADMSU Report Finalization										
ADMSU FEMA Review										
Start ADMP										
Start Review Existing Conditions										
Floodplain Delineation (Fan)										
Rules of Development										
Stakeholder Coordination										
Public Involvement										
Alternatives Analysis										
Recommendations										

Visit the District's Web site at www.fcd.maricopa.gov.



History of McMicken Dam

With the District as its local sponsor the U.S. Army Corps of Engineers (Corps) constructed the McMicken Dam Project in 1955 to protect Luke Air Force Base and surrounding agricultural lands from flooding. In the early 1970s, the Corps evaluated transverse cracking of the embankment and recommended corrective treatment. Over the next four years, the Corps attempted to obtain funding to implement the corrective treatment. Failing to secure the necessary funding, the Corps breached the dam at two locations in 1977 to avoid dam failure.

In response to flooding that occurred in 1978, the District repaired the dam and restored the two breach locations in 1982. During the 1982 repairs, studies detected the presence of earth fissures, or cracks, near the south end of the dam [see Figure 2]. It was determined that the fissures were ultimately the result of large-scale ground subsidence caused by groundwater pumping. Survey data by the District suggests that subsidence is continuing to occur along the dam.

Additional studies were conducted in 2000 to further characterize the fissures near the embankment. The results of these studies indicate that the earth fissures had progressed to areas adjacent to the south end of McMicken Dam. In 2005, the District modified the southern end to mitigate the risk of fissures that could lead to a dam failure.

Most recently, the District has received approval from the Corps to remove the vegetation within the emergency spillway to prevent a blockage and avoid the risk of water overtopping the dam during a very large storm.

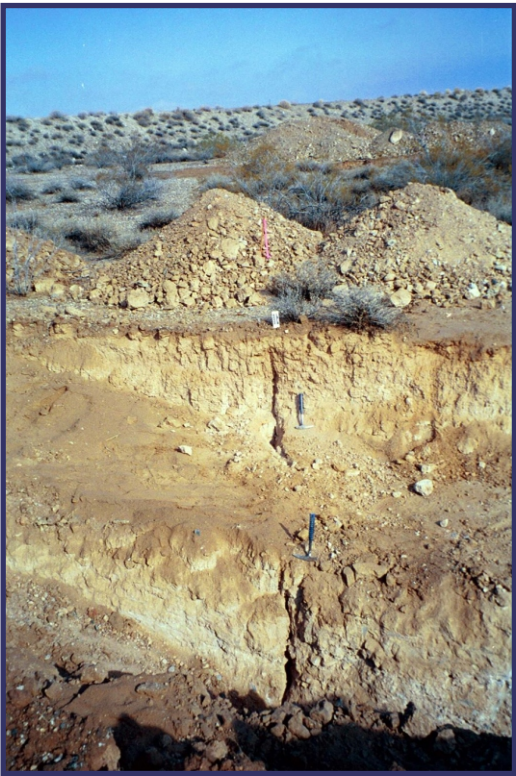


Figure 2: The above photo shows an earth fissure—a crack at or near the Earth's surface resulting from differential land subsidence.

Rehabilitation of McMicken Dam

The District is considering rehabilitating the McMicken Dam Project in order to extend its useful life, maintain flood control benefits to downstream properties, and comply with state dam safety requirements. Alternatives currently being evaluated include structural improvements (rehabilitation) of the existing dam or replacing the dam with other types of flood protection such as detention basins, channels, and levees. The District has retained the services of Entellus and AMEC, full-service engineering design firms, to develop alternatives for the project.

Project Issues

The District is currently conducting a planning study as an early step in the process of maintaining the dam's intended flood control function through rehabilitation or replacement. The District is also working with the Corps to obtain federal assistance for the McMicken Dam Project. Project issues that have been identified to date include:

1. High hazard potential dam and property damage during flood events.
2. In order for McMicken Dam to maintain its current level of flood protection for the public, concerns regarding the age of the structure, land subsidence, earth fissuring, urbanization encroachment, and current dam safety standards must be resolved.
3. New state regulations related to dam design and function have made it necessary to modify the dam to meet those requirements or replace the dam with alternative structures.
4. Groundwater overdraft in the region, which has caused areas of subsidence and earth fissures, may have also affected drainage patterns in the area.
5. Preservation of the Sonoran Desert character of the project area is a key land use objective by several regional planning

Project Elements

The objectives for this project are to develop alternatives and select a viable plan that addresses continued flood protection and incorporates other interests to maximize the public benefit. Project elements will include:

- Engineering and geotechnical studies
- Incorporation of landscape aesthetics
- Development of alternatives
- Public information meetings
- Selection of a recommended alternative

Additional technical services may include biological sciences, archaeology, and environmental surveys.



Figure 3: McMicken Dam and the Beardsley Canal—looking north toward Grand Avenue.

agencies. McMicken Dam is a regional open space corridor that will link White Tanks Regional Park, West Valley Recreation Corridor, Lake Pleasant, and Estrella Mountain Regional Park.

6. It is important to incorporate multiple uses such as flood control, flood damage reduction, and landscape aesthetics. The Maricopa Regional Trail Corridor strives to increase recreation accessibility and connectivity of local communities. The McMicken Dam Project provides opportunities to enhance the range and quality of recreation available in the area through maintenance and re-establishment of natural plant communities.
7. Due to increased development, transportation and utility corridors need to be identified.
8. The McMicken Dam has suffered damage due to trespassing by off-road vehicles [see Figure 1].